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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,824	03/29/2006	Hatsuhiko Harashina	2101-26	9914

23117 7590 09/04/2008

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EXAMINER	
USELDING, JOHN E	
ART UNIT	PAPER NUMBER
1796	

MAIL DATE	DELIVERY MODE
09/04/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/573,824	HARASHINA, HATSUHIKO	
	Examiner	Art Unit	
	John Uselding	4171	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 July 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-6 and 10-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-6 and 10-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/23/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claim 1 is objected to because of the following informalities: The period should be removed from the phrase "substituent., said". Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3-6, 10, 13 and 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harashina (WO 2001/05888). US Patent 6,753,363 B1 is a national stage application of the WO document and is used as an English translation thereof. *See MPEP 901.05.*

Regarding claims 1 and 3: Harashina teaches a resin composition comprising a polyacetal resin and a basic nitrogen-containing compound, (Col. 2, lines 49-51), wherein the basic nitrogen-containing compound may be a hydrazide, with examples given of terephthalic acid, naphthalenedicarboxylic acids, biphenylenedicarboxylic acids, 1,4,5,8-naphthoic acid, and polyhydrazides of C_{7-16} aromatic polycarboxylic acids derivatives thereof (Col. 30, lines 7-32), which corresponds to claims 1 and 3 of the

instant claims. Although Harashina teach several possible hydrazides it would have been obvious to one of ordinary skill in the art at the time the invention was made to have tried any of them from the finite list. See MPEP 2141. Harashina teaches the use of phenol-series antioxidants including hindered phenols (Col 32, lines 23-51). Harashina teaches the use of silicon-containing compounds, including (poly)organosiloxanes such as dialkylsiloxanes, alkylarylsiloxanes, diarylsiloxanes, other monoorganosiloxanes, and homopolymers thereof (e.g., polydimethylsiloxane, polyphenylmethylsiloxanes) and copolymers thereof (Col. 34, lines 50-59). The applicant teaches that (poly)organosiloxanes including dialkylsiloxanes, dimethylsiloxane, and phenylmethylsiloxane are processing stabilizers (0072). Therefore Harashina teaches processing stabilizers that are silicone-series compounds. Harashina teaches the use of nitrogen-containing compounds as heat-stabilizers (Col. 33, lines 28-51) as well as the use of alkaline or alkaline earth metal-containing compounds, particularly organic carboxylic acid metal salts (calcium acetate, calcium citrate, magnesium stearate, and calcium stearate), as well as zeolite and hydrotalcite (Col. 35, line 64 through Col. 36 line 5).

Regarding claim 4: Harashina further teaches that the nitrogen-containing compound is selected within the range of 0.01 to 80 parts by weight, and most preferably 0.1 to 15 parts by weight per 100 parts of the polyacetal resin (Col. 31, lines 37-50), with examples 1-24 falling within the range cited by instant claim 4. Thus, the prior art anticipates claim 4.

Regarding claims 5 and 6: Harashina teaches that the resin composition may contain additives such as antioxidants, heat stabilizers, fillers, a colorant, weather (light) resistant stabilizer, a slip agent, and impact resistance improvers (Col. 31, lines 52-56, Col 35, lines 37-54). The examples of antioxidants such as 2,6-di-t-butyl-p-cresol and 1,3,5-trimethl-2,4,6-tris(3,5-di-t-butyl-4-hydroxybenzyl)benzene (Col. 32, lines 23-51), and the examples of heat stabilizers such as 4-methoxy-2,2,6,6-tetramethylpyperidine and 4-benzyloxy-2,2,6,6-tetramethylpyperidine are free of intramolecular ester bonds (Col. 33, lines 28-51). Therefore, this would anticipate the instant claim 6, as one may choose to incorporate these intramolecular ester-free bonds in the resin.

Regarding claim 10: Harashina teaches the use of nitrogen-containing compounds as heat-stabilizers (Col. 33, lines 28-51) as well as the use of alkaline or alkaline earth metal-containing compounds, particularly organic carboxylic acid metal salts (calcium acetate, calcium citrate, magnesium stearate, and calcium stearate), as well as zeolite and hydrotalcite (Col. 35, line 64 through Col. 36 line 5).

Regarding claim 13: Harashina teaches examples of impact resistance improvers include core/shell polymers constituted of polyurethane or rubbery core polymers and glassy shell polymers (Col. 35, lines 51-53).

Regarding claim 14: Harashina teaches that examples of a slip agent include silicone resin, fluororesin, and polyolefinic resin (Col. 35, lines 41-42).

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harashina (WO 2001/05888) as applied to claim 1 and further in view of Schuette et al.

(4,386,178). US Patent 6,753,363 B1 is a national stage application of the WO document and is used as an English translation thereof. *See MPEP 901.05.*

Regarding claim 11: Harashina teaches the composition of claim 1 as shown above. Not disclosed is the use of an alkaline earth metal salt of a hydroxyl acid as heat stabilizers. Schuette et al, however, teaches that heat stabilizers, including metal salts of hydroxyl-substituted carboxylic acids have been used as heat stabilizers in the protection of polyacetals (Col. 1, lines 13-23). Harashina and Schuette et al. are analogous art because they are both concerned with the same field of endeavor, namely the use of a heat stabilizer in a polyacetal resin. At the time of the invention a person having ordinary skill in the art would have found it obvious to combine to employ the heat stabilizers taught by Schuette et al. as a heat stabilizer in the composition of Harashina. This is a simple substitution of one know element for another to obtain predictable results.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harashina (WO 2001/05888) as applied to claim 5 and further in view of Sugiyama et al. (US patent 4,929,712). US Patent 6,753,363 B1 is a national stage application of the WO document and is used as an English translation thereof. *See MPEP 901.05.*

Regarding claim 12: Harashina teaches the composition of claim 5 as shown above. Not disclosed is However, are examples of weather (light)-resistant stabilizers. Sugiyama teaches that a polyacetal resin may include additives including antioxidants, heat stabilizers, and weather (light) stabilizers, which include benzotriazoles,

benzophenones, and aromatic benzoates, listing for example 2-(2'-hydroxy-5'-methylphenyl)benzotriazole and 2-(3,5-di-t-amyl-2-hydroxyphenyl)benzotriazole among others (Col. 5, lines 1-4, lines 46-56). Harashina and Sugiyama et al. are analogous art because they are both concerned with the same field of endeavor, namely the use of additives in a polyacetal resin. At the time of the invention a person having ordinary skill in the art would have found it obvious to use the specific weather (light)-resistant stabilizer of B with the composition of Harashina and would have been motivated to do so because it would make a polyacetal resin composition that is weather (light)-resistant.

Claims 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harashina (WO 2001/05888). US Patent 6,753,363 B1 is a national stage application of the WO document and is used as an English translation thereof. *See MPEP 901.05.*

Regarding claim 15: the process of mixing a polyacetal resin with an aromatic compound, a basic nitrogen-containing compound (of which includes the carboxylic acid hydrazides) and kneading and extruding the mixture is taught by Harashina (Col. 36, lines 43-65). Melting and mixing occur in the extruder. Harashina fails to disclose in the method that the carboxylic acid hydrazide is fed from a side feed port of the extruder. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have added the carboxylic acid hydrazide at any time during the extruding process. Selection of any order of performing process steps, i.e. whether the hydrazide

is added at the main feed port or the side feed port, is *prima facie* obvious in the absence of unexpected results. See MPEP 2144.04.

Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harashina (WO 2001/05888). US Patent 6,753,363 B1 is a national stage application of the WO document and is used as an English translation thereof. *See MPEP 901.05.*

Regarding claims 16 and 18: Harashina teaches that examples of articles that may be made using the composition of claim 1 are mechanical parts in the automobile field, electric system-related parts, audio equipment, car navigation equipment, living-related parts such as lighting equipment and fittings, and construction or piping material (Col. 37, lines 25-60).

Regarding claim 17: the applicant states in the specifications that "the amount of formaldehyde emission from the shaped article can be effectively reduced by a smaller amount of the specific carboxylic acid hydrazide. Further, in the case of using the specific carboxylic acid hydrazide and the heat stabilizer (formaldehyde inhibitor) in combination, the amount of formaldehyde emission can be also inhibited to a large extent." Harashina has taught in the examples that a resin which conforms to the specifications given in the applicant's instant claims can be made, which thus would inherently also conform to the guidelines for emission of formaldehyde in claim 17 (Tables 1-10).

Response to Arguments

Applicant's arguments filed 7/15/2008 have been fully considered but they are not persuasive because:

Applicant's argument that Harashina has no teaching with regard to a processing stabilizer is not persuasive. As shown above, Harashina teach compounds that the applicant has admitted are inherently processing stabilizers. Even though Harashina has a different intended use for the compounds they still inherently function as processing stabilizers.

Applicant's argument of unexpected results is not persuasive. The applicant has only shown a difference in results by altering the carboxylic acid hydrazide compound when specific compounds are used in the composition. For one, the scope of the claims is not specific enough to be commensurate with the showing of the different results. Se MPEP 716.02(d). Also, of the two components combined in the 103 rejections one of them (weather (light)-resistant stabilizer) is not even present in the comparative examples and the other (heat stabilizer) is the same in the applicant's and the comparative examples.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Uselding whose telephone number is (571)270-5463. The examiner can normally be reached on Monday-Thursday 6:00a.m. to 4:30p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo, Ph.D./
Supervisory Patent Examiner, Art Unit 1796
2-Sep-08

John Uselding
Examiner
Art Unit 4171